west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-0882O
Plant ID No.:	039-00663
Applicant:	Optima Belle LLC
Facility Name:	Belle
Location:	Belle, Kanawha County
NAICS Code:	325199
Application Type:	Class II Administrative Update
Received Date:	April 4, 2017
Engineer Assigned:	Mike Egnor
Fee Amount:	$300.00
Date Received:	March 31, 2017
Complete Date:	April 21, 2017
Due Date:	June 20, 2017
Applicant Ad Date:	April 10, 2017
Newspaper:	*The Charleston Gazette*
UTM's:	Easting: 451.90 km Northing: 4,232.60 km Zone: 17

Description: An alternative operating scenario for the production of Sodium Butyl Carbitol which is a raw material used as a catalyst in the chemical processing industry. Emissions from this scenario include 0.75 lbs/hr and 0.07 TPY of VOC's, 0.05 lbs/hr and 0.01 TPY of Butyl Carbitol, 0.10 lbs/hr and 0.01 TPY of Particulate Matter, and 0.05 lbs/hr and 0.01 TPY of Total HAP's.

INTRODUCTION

On April 4, 2017 Optima Belle LLC submitted a Class II Administrative Update for the proposed revisions to an operating scenario for the production of Sodium Butyl Carbitol at the Belle Plant.

On April 14, 2017, Optima submitted an affidavit of publication indicating that the required legal notice was run in the Charleston Gazette on April 10, 2017, initiating the 30-day public notice period. Optima also submitted the application fee of $300 on April 4, 2017 to meet the requirements associated with the Application for Modification Permit.

DESCRIPTION OF PROCESS

Sodium Butyl Carbitol Process Overview:

Sodium Butyl Carbitol is a raw material which is used as a catalyst in the chemical processing industry.

SITE INSPECTION

No site inspection was performed by the permitting engineer for this modification as the facility is well known to the DAQ and is frequently inspected by members of the DAQ Enforcement Section.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Sodium Butyl Carbitol Process
Emissions from this scenario include 0.75 lbs/hr and 0.07 TPY of VOC's and 0.05 lbs/hr and 0.01 TPY of Butyl Carbitol (HAP). The facility is not claiming any reduction of particulate matter for dust collectors 114 and 115 for this process. Particulate matter emissions from Emission Points 104.003A or 104.003B are 0.10 lbs/hr and 0.01 TPY.

Emissions Summary

The proposed changes addressed in permit application R13-0882O shall result in the affected emission points undergoing emissions as shown in the following Table 1 - Emissions Summary.

Table 1 - Emissions Summary Operating Scenario: Sodium Butyl Carbitol Process

Emission Point ID	Device Type	Pollutant	Air Pollution Control Device ID	Maximum Potential Uncontrolled Emissions		Maximum Potential Controlled Emissions	
				lbs/hr	tons/yr	lbs/hr	lbs/yr
104.003A or 104.003B	Dust Collectors	PM	114 115	0.10	0.01	0.10	20
104.014	Incinerator/ Incinerator Scrubber	VOC's	009 010	0.75	0.17	0.75	140
		Butyl Carbitol (HAP)		0.05	0.01	0.05	20

REGULATORY APPLICABILITY

The following State and Federal regulations were considered for applicability to the subject facility:

The following regulations apply to this production unit: West Virginia Regulations 6, 13, 21, 30 and US EPA MACT Standards for the Miscellaneous Organic NESHAP.

RULE 7 - CONTROL OF PARTICULATE MATTER FROM MANUFACTURING PROCESSES

Particulate matter from the Sodium Butyl Carbitol Process is sent through the dust collectors 114 or 115 (104.003A or 104.003B). The dust collector is subject to Rule 7. This is a "Type a" Source Operation under Rule 7. There are no claimed reductions in particulate matter from Dust Collectors 114 or 115. The PM emissions are 0.10 lbs/hr, which are below the Rule 7 limit. The opacity requirements for these sources are already permitted under their Title V Permit.

RACT
45CSR21-40.3.c requires RACT analysis on a case by case basis for those VOC emissions greater than 6 pph which are constructed, modified, or begin operation after the date 45CSR 21 becomes effective. The proposed changes to R13-0882O do not include an increase of VOC's greater than 6 pph.

This class II permit amendment application is being filed under 45CSR13 since a change in batch production is being requested. Overall, 0.07 TPY of VOC's, 0.01 TPY of Butyl Carbitol (HAP), and 0.01 TPY of Particulate Matter will be emitted.

TOXICITY OF CRITERIA REGULATED POLLUTANTS

Butyl Carbitol has the following exposure limits:
ACGIH
10 ppm TWA Inhalable fraction and vapor

NIOSH
Not Established

OSHA
Not Established

Heptane has the following exposure limits:
ACGIH: TLV
STEL: 2,050 mg/m^3 15 minutes
STEL: 500 ppm 15 minutes
TWA: 1,640 mg/m^3 8 hours
TWA: 400 ppm 8 hours

NIOSH: REL
CEIL: 1,800 mg/m^3 15 minutes
CEIL: 440 ppm 15 minutes
TWA: 350 mg/m^3 10 hours
TWA: 85 ppm 10 hours

OSHA PEL
TWA: 2,000 mg/m^3 15 minutes
TWA: 500 ppm 8 hours

Silbond Catalyst has the following exposure limits:
ACGIH: TWA
10 ppm Inhalable fraction and vapor

Acute dermal toxicity
> 5,000 mg/kg (estimated)

Acute oral toxicity
LD50 Rat: 5,660 mg/kg

Acute dermal toxicity
LD50 Rabbit: 2,700 mg/kg

MONITORING OF OPERATIONS

The Title V Permit provides monitoring requirements due to opacity readings. The facility is already required to monitor visible emissions (Condition 4.2.2), monitor their production (Condition 4.2.1), and to monitor the temperature of the incinerator (Condition 4.2.3).

Changes to R13-0882O include:

1. Updated the Permit Number to R13-0882O.

2. Added boilerplate Condition 3.3.1.d as well as updated the citation.

3. Changed the contact information in Condition 3.5.3.

4. Added Condition 4.1.2.14.1 to require that the dust collector 114 or 115 be employed by emission point 104.003A or 104.003B during all periods of the Sodium Butyl Carbitol process to minimize particulate emissions generated during periods in which the Reactor #3 or #6 Charge Hoppers are being operated.

5. Added Condition 4.1.2.14.2 to require that the incinerator (009) and incinerator scrubber (010) be used at emission point 104.014

during all periods of the Sodium Butyl Carbitol process. A limit for the total number of batches per year has also been added.

6. Added Condition 4.1.2.14.3 to require specific emissions limits for Particulate Matter, VOC's, and Butyl Carbitol (a HAP) for the Sodium Butyl Carbitol process.

7. Added "R13-0882O" to Condition 2.5.1.

RECOMMENDATION TO DIRECTOR

Permit application, R13-0882O, submitted by Optima Belle, LLC, for the administrative permit update of the production facility located at the Belle Plant in Belle, Kanawha County, WV, has been reviewed and determined to meet all applicable requirements, and is therefore, recommended for approval.

Mike Egnor
Engineer

5/11/17
Date